

# The chequered history of the Chattering Kingfisher *Todiramphus tutus* on Tahiti. I: type specimens

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**SUMMARY.**—We discuss the provenance of two specimens claimed to be the type of Chattering Kingfisher *Todiramphus tutus*: one each in Liverpool, UK, and Leiden, the Netherlands. The type was collected during Cook's third voyage. Our research indicates that neither is the type specimen, which is probably now lost, like most Cook specimens. Instead, both may have been collected by George Bass, who has been neglected as an important source of Pacific material. Bass contributed to the Baudin expedition to Australia and the Pacific that sailed under the French flag. The Muséum National d'Histoire Naturelle (MNHN), Paris, received many specimens collected during this expedition, and also had strong links with important collectors such as Temminck, the Leverian Museum and Bullock, resulting in their receiving some Pacific material via this source. This may explain the presence of the Chattering Kingfisher specimens in Liverpool and Leiden.

On Tahiti, in the Society Islands, French Polynesia, two species of kingfisher are said to occur: Society (Tahitian) Kingfisher *Todiramphus veneratus* and Chattering Kingfisher *T. t. tutus* (Pratt *et al.* 1987, Fry *et al.* 1992). The present status of the first species on Tahiti is clear, but that of the second is not (*cf.* van der Vliet & Jansen 2015). The first reports of kingfishers on Tahiti date from the three Cook voyages in the late 18th century. On the first, Parkinson (1773: 100) mentioned a blue-and-brown 'sacred' kingfisher from Otaheiti (=Tahiti) in July 1769. During the second, in August–September 1773, the ship's naturalist, Rheinhold Forster (*in* Lichtenstein 1844: 162–163), reported a kingfisher on Tahiti, Huahine, Raiatea and Tahaa. The accompanying drawing by Forster's son, George, is of a Society Kingfisher of the nominate subspecies, which is confined to Tahiti (Lysaght 1959, Medway 1979), being instantly identified by the black breast-band, which sets this taxon apart from other tropical Pacific kingfishers. On the plate, Forster noted that the bird is called 'Erooro' on Tahiti. However, Forster's work is not the type description and it is noteworthy that the Forsters neither described nor illustrated Chattering Kingfisher. During the third and last voyage, Cook & King (1784: 33) reported a kingfisher 'Eatooa' during a ceremonial at present-day Marae Atehuru in September 1777. Whether the reports of the first and third voyage referred to Society or Chattering Kingfisher is unknown.

Both kingfisher species were then reported in more detail by Latham (1782) based on specimens collected during either Cook's second or third voyage. Latham's (1782) work formed the basis of the scientific descriptions by Gmelin (1788), who formally described Chattering Kingfisher as *Alcedo tuta* (from Tahiti) and Society Kingfisher as *A. venerata* (from Apye, Insula Amici; present-day Ha'apai, Tonga).

To resolve the confusion surrounding the taxonomic history of Chattering Kingfisher, we examined the earliest writings and illustrations of the species. We focus on two extant specimens both with claims to be the type: one at the World Museum, Liverpool (LIVCM), UK, and the other at the Naturalis Biodiversity Center (Naturalis), Leiden, the Netherlands. We also discuss the routes via which these specimens may have reached these collections.

We postulate that the Muséum National d'Histoire Naturelle (MNHN), Paris, played an important role.

## Description of relevant types by Latham and Gmelin

Gmelin (1788: 453) described several kingfisher species of which three are relevant for Tahiti and the Society Islands. His descriptions were almost a literal translation of the English descriptions by Latham (1782). Gmelin first described Respected (=Chattering) Kingfisher *Alcedo tuta* (his no. 28), type locality Tahiti, then Venerated (now Society or Tahitian) Kingfisher *A. venerata* (no. 29), from Apye, Insula Amica (Ha'apai, Tonga). Finally, he described several varieties of Sacred Kingfisher *A. sacra* (now *T. sanctus*), his no. 30, quoting its range as the Society Islands, New Zealand and the Philippines. In all of his descriptions, Gmelin referred to Latham (1782: 621–624). It is interesting that Latham described these three species in reverse order, first Sacred Kingfisher and Chattering Kingfisher last.

For nomenclatural purposes, it is relevant to quote Latham's descriptions in full. He first described the main variety of Sacred Kingfisher (p. 621; no. 12) from specimen(s) in the Leverian Museum: 'This species seems bigger than the common Kingfisher: the length is nine inches and a half. The bill is strong, depressed, an inch and three quarters long, and of a lead-colour: but the under part of the lower mandible is white: the head and below the eye, on each side, as well as the upper parts of the body, are of a light blue green, darkest about the ears: over the eye is a stripe of pale ferruginous, beginning at the nostrils, and meeting at the back part of the head: under the blue beneath the eye, a narrow orange ferruginous stripe; and beneath that, on the nape is a blue band: quills and tail blackish; the outer edges blue, and when closed appear wholly blue; all the under parts are white, with a tinge of buff-colour passing round the neck as a collar, the legs are black. This, and its Varieties, inhabit Otaheite, and the other Society Islands in the South Seas.'

Using specimens from the Leverian Museum (as indicated in his text), he then described four more varieties of his Sacred Kingfisher. Varieties C and D were specifically stated by Latham to originate from New Zealand and the Philippines, respectively, so these are not our concern here. Latham's descriptions of varieties A and B follow.

Variety A: 'The first variety has a white band over the eye to the hind head, instead of ferruginous: beneath this band, at the nape, is one of black, which in the other is blue: the scapulars also are much more inclined to green, and darker than in the former bird: and the white on the neck, and the sides of the breast, has each feather fringed with ash-colour: the knees of both are black a very little way up on the outside. I observed in one of these a slender black line, which divided the white collar on the neck, exactly in the middle.'

Variety B (depicted on Pl. 27): 'Another variety, said to come from Ulietea, was of the same size as the above. Bill the same: the crown of the head greenish black: over the eye a ferruginous streak, beneath, and behind the eye a broad streak of black, which passed to the hind head, and encompassed it all round: chin white: neck, breast, and belly, pale ferruginous: this colour encompassing the neck like a collar: each feather of the throat, neck, and breast, margined with dusky: outside of the thighs blackish, as in the others: back and wings like the head: rump pale bluish green: quills and tail feather blackish, with blue margins: legs dusky.'

Latham then described his Venerated Kingfisher (=Society Kingfisher) (pp. 623–624; no. 13), from specimen(s) in the Leverian Museum: 'Length nine inches. Bill an inch and three quarters long, much depressed, and of a black colour: but the base, for above half an inch, of the under mandible is white: the upper parts of the body are light brown, in some parts mixed with greenish feathers, in others tinged only with glossy green, from the

eye to the hind head, this last colour is very conspicuous, forming a kind of wreath round the back part of the head, at which place it inclines to white: the wing coverts are brown, many of them margined with green: the secondaries are also brown with green margins, and many of them as long as the greater quills, which are only edged with green for about half their length: the upper parts of the body are very pale: the tail is not quite four inches in length, rounded at the ends, and coloured as the quills: the shafts of both quills and tail are chestnut, legs dusky. This species inhabits Apye, one of the Friendly Islands, where it is held as sacred among the natives as that of Otaheite.'

Finally, Latham described his Respected Kingfisher (= Chattering Kingfisher) as follows (p. 624; no. 14), without referring to a source for the specimen(s): 'Size of our common Kingfisher: length eight inches and a half. Bill depressed, black, and an inch and a half in length; the lower mandible white: the upper parts of the body olive-green: over the eye a white streak: round the neck a collar of greenish black: the under parts of the body white: tail longish: legs black. Inhabits Otaheite, where it is called Erooro. It is accounted sacred, and not allowed to be taken nor killed.'

Some of the bird specimens from Cook's voyages ended up in the collection of Sir John Ashton Lever, with the rest in the collection of the Royal College of Surgeons, London (see below under 'MNHN and Bullock'). It is thus relevant that Latham specifically stated that the varieties of Sacred Kingfisher, as well as the Venerated (=Society) Kingfisher, were described from specimens in Lever's collection (then the Leverian Museum). For his Respected (=Chattering) Kingfisher, this is not stated and Latham may have used other sources to describe this species (Latham 1781: iv, Sharpe 1906: 90, Sawyer 1949). One such source may have been the collection of Sir Joseph Banks because kingfishers from Polynesia are mentioned in two undated catalogues prepared by Jonas Dryander of this collection (cf. Medway 1979). The inclusion of kingfishers in these catalogues indicates that Banks may have possessed specimens of Chattering Kingfisher. Dryander pointed out that Tobias Furneaux was the source of these kingfishers (Dryander n. d.). This points to Cook's second voyage as the origin because Furneaux served as captain on Cook's companion vessel. From the very brief descriptions in Dryander, it may be deduced that Banks indeed possessed a Chattering Kingfisher, although the species was neither described nor depicted by Forster (*in* Lichtenstein 1844). It could also be that the kingfisher in Banks' collection was a similar species like Collared Kingfisher *T. chloris* or even Society Kingfisher (cf. Cibois & Thibault 2009).

Some observations concerning the scientific descriptions should be made. First, they contain some errors. Latham mentioned that two species occur on Otaheite (=Tahiti), namely his Sacred and Respected Kingfishers. However, Sacred Kingfisher does not occur on Tahiti, so the type locality is erroneous. Likewise, his type locality for Venerated Kingfisher is wrong, as this species does not occur on Ha'apai, Tonga, but on Tahiti. Both errors may be the result of the often erroneous labelling of many of Cook's specimens (Stresemann 1950). Second, the description of Sacred Kingfisher represents a composite of taxa (Finsch & Hartlaub 1867). Sacred Kingfisher (as it is known now) occurs neither on the Society Islands nor in the Philippines (where it is replaced by Collared Kingfisher *T. c. collaris*). We agree with D. G. Medway (*in* Lagen 1987) that the description of variety A is a good match for Chattering Kingfisher. Latham's Sacred Kingfisher thus comprises taxa that are present-day Sacred Kingfishers (main variety and variety C), Collared Kingfisher (variety D) and Chattering Kingfisher (variety A). Variety B is more difficult to identify, but Medway (*in* Lagen 1987) associated it with the Tanna (Vanuatu) subspecies of Collared Kingfisher *T. c. tannensis*. The situation of Latham's Respected Kingfisher vs. his variety A of Sacred Kingfisher recalls the situation in which Latham (1801a,b, 1822) described the same



species (Yellow-tufted Honeyeater *Lichenostomus melanops*) using four different English names and three Latin binomials (Jansen & Roe in prep.).

Third, there has been doubt concerning the age of the type of Chattering Kingfisher. For instance, Lysaght (1959) was of the opinion that the type concerned a young bird based on the upperparts colour (olive-green rather than brilliant greenish blue). Because many juvenile *Todiramphus* are heavily scaled brown and grey (e.g. Sharpe 1868), Latham's type description must refer to a subadult.

Finally, because Gmelin formally described the kingfishers in reverse order to Latham, no nomenclatural problem exists with respect to present-day Chattering Kingfisher. The name of Gmelin's Respected (=Chattering) Kingfisher appears before variety A of Gmelin's Sacred Kingfisher. Although Coues (1879: 690) described Gmelin as 'the industrious but indiscriminate and incompetent compiler of the xiii. ed. of the Syst. Nat.', Gmelin was right in this case!

## Plates by Webber and Ellis

In reconstructing the history of type specimens collected during Cook's third voyage, several authors have stressed the importance of paintings by John Webber and William Wade Ellis. These illustrate species collected during this voyage (Lysaght 1959). Because many type locations given by Latham (and therefore Gmelin) are as erroneous as his descriptions, Stresemann (1950) suggested that annotations on Ellis' paintings of the specimens provide the most accurate information on their type localities. Stresemann (1950) apparently based this conclusion on Sharpe (1906). Latham never mentioned the paintings by Webber and Ellis, and was perhaps not even aware of them. We examined the relevant paintings on 29 July 2014 at the Natural History Museum (NHMUK) and British Museum (BM), both in London, to determine the species depicted and to note any other information written on them, although we did not examine their reverse sides as all are framed. By these means, we could determine if Chattering Kingfisher was ever certainly recorded during Cook's voyages. If so, specimens of the species may have been available.

Following Lysaght (1959), relevant paintings are as follows, one by Webber—Pl. 135 ('*venerata*')—and two by Ellis—Pl. 22 ('*tuta*') and Pl. 23 ('*venerata*'). We now discuss these three paintings in this order.

Lysaght (1959) identified the bird on Webber's plate as a Society Kingfisher of the nominate subspecies from Tahiti (Fig. 1). We disagree and instead identify it as an example of the subspecies *youngi* of Society Kingfisher from Moorea, as the bird in the painting is very brownish with an indistinct brownish breast-band and only a greenish tinge to its primary-coverts. This matches present-day descriptions of *youngi* perfectly (Fry *et al.* 1992, Gouni & Zysman 2007). Webber illustrated just one kingfisher species for the Society Islands, as did Forster during Cook's second voyage (Lichtenstein 1844).

Ellis, on the other hand, painted two species. We agree with Lysaght (1959) that Ellis' Pl. 22 depicts a Chattering Kingfisher (Fig. 2). As deduced above, the illustration may in fact represent a subadult bird. Stresemann (1950) and Lysaght (1959), following Sharpe (1906), noted that the locality was Otaheite (=Tahiti), but we cannot confirm this. Pl. 23 was identified by Lysaght (1959) as a Society Kingfisher, perhaps of the subspecies *youngi* (Fig. 3). We agree. Stresemann (1950) and Lysaght (1959), following Sharpe (1906), noted the locality as the Friendly and Society Islands, but again we cannot confirm this. The only relevant note on the painting by Ellis is his remark that the bird is called 'Errooro' on Tahiti (similar to the name mentioned by Forster) and 'Tautoria' on Ulietea (=Raiatea). Both names compare well with Townsend & Wetmore (1919) who stated that kingfishers are called 'Ruru' on Tahiti and 'Otatari' on Bora Bora.



Figure 1 (above left). Pl. 135 by John Webber, painted during Cook's third voyage; we consider this bird to be a Society Kingfisher *Todiramphus veneratus youngi* from Moorea (© British Museum, London)

Figure 2 (above right). Pl. 22 by William Wade Ellis, painted during Cook's third voyage; we consider this bird to be a Chattering Kingfisher *Todiramphus t. tutus* (Justin J. F. J. Jansen © Natural History Museum, London)

Figure 3. (left) Pl. 23 by William Wade Ellis, painted during Cook's third voyage; we consider this bird to be a Society Kingfisher *Todiramphus veneratus youngi* from Moorea (Justin J. F. J. Jansen © Natural History Museum, London)

From our review of relevant paintings of Polynesian kingfishers, it is clear that Chattering Kingfisher was collected during Cook's third voyage as evidenced by the Ellis painting (Fig. 2), making it entirely conceivable that Latham and his contemporaries saw the type specimen(s) in a European collection. It is unclear if the species was collected during the second voyage because Forster does not mention it. The other paintings by Webber and Ellis refer to Society Kingfisher and do not concern us.





Figure 4. Specimen of adult Chattering Kingfisher *Todiramphus t. tutus*, LIVCM D2326, considered to be the type specimen by Lagen (1987), but this cannot be confirmed (Tony Parker © World Museum, Liverpool)



Figure 5. Specimen of adult Chattering Kingfisher *Todiramphus t. tutus*, Naturalis, Leiden (RMNH.AVES.204880), considered to be the type specimen by Lysaght (1959), but this cannot be confirmed (© Naturalis, Leiden)

## Whereabouts of the 'type' of Chattering Kingfisher

Two different specimens have been postulated in recent literature to be the type of Chattering Kingfisher. Lagen (1987) concluded that a specimen now at LIVCM may well be the type specimen (Fig. 4), whereas Lysaght (1959) stated that a bird currently at Naturalis is the type (Fig. 5). These specimens could have arrived in these collections via the auctions of the Leverian Museum in 1806 (LIVCM) and Bullock's museum in 1819 (Naturalis). At

both auctions, many ornithologists bought specimens and this resulted in Cook's material being spread across various private and public collections (Whitehead 1969). Apparently Bullock was an important purchaser of ethnographic material at the Leverian auction in 1806, which explains the significance of the auction of Bullock's collection with respect to the provenance of Cook's material (*cf.* Stresemann 1951, Whitehead 1969, Kaeppler 2011). For both auctions, catalogues describing the lots were published. Several copies, sometimes annotated with buyer's names, still exist. In the annotated catalogues of the Leverian auction Bullock's name does not feature as a significant purchaser of bird material, which seems to contradict his often-stated prominent presence. However, Bullock may still have possessed Leverian specimens, acquired post-1806 (*cf.* Sharpe 1906, Whitehead 1969). Using the annotated auction catalogues, in many cases we can discover who bought which specimens, and where they ended up. We now discuss the histories of relevant kingfisher specimens sold at these two auctions.

*Leverian Museum.*—Several kingfishers from Cook's voyages were held in this museum, as evidenced by the plates by Sarah Stone (Jackson 1998), who worked in the museum between 1777 until its closure in 1806. Stone painted two undated plates of Polynesian kingfishers: Pl. 41 (Jackson 1998: 116) and Pl. 40 (Jackson 1998: 134).

The Leverian auction took place between 5 May and 19 July 1806, and several examples of the sale catalogue are still extant (Largen 1987, Kaeppler 2011). We used the 1979 reprint (King & Locheé 1979a), as well as original copies at NHMUK (annotated by W. Clift) and the Cuming Museum (CM), London (annotated by G. Humphrey; Jackson 1998). For each of the lots listed below, its description and the buyer's annotation per copy is presented: (i) lot 2778 'Sacred Kingfisher, *Alcedo sacra*, from New Holland'. Sivers (King & Locheé 1979a), Sivers (NHMUK), Sivers (CM); (ii) lot 4251 'Venerated Kingfisher, *Alcedo venerata*, m. and fem. Very rare'. Vaughan (=Revd. Vaughan; Kaeppler 2011) (King & Locheé 1979a), Vaughan with annotation 'White Kingfisher' (NHMUK), Vaughan (CM); (iii) lot 5612 '*Alcedo sacra*, m. and fem.'. Thompson (King & Locheé 1979a), Thompson (NHMUK), Thompson (CM); (iv) lot 6084 'a curious Kingfisher, S. Seas'. No annotation (King & Locheé 1979a), no annotation (NHMUK), Fichtel (CM); and (v) lot 6594 'Small-belted Kingfisher'. Fichtel (King & Locheé 1979a), Fichtel with annotation 'black belt across the belly' (NHMUK), Fichtel (CM). It is unclear who Sivers, the buyer of lot 2778, was (Whitehead 1978, Kaeppler 2011; A. Kaeppler *in litt.* 2014). This specimen is probably lost.

Von Fichtel represented the Imperial Museum in Vienna, Austria (now the Naturhistorisches Museum Wien; NMW) at the auction. Sources indicate that specimens pertaining to three lots (4251, 6084 and 6594) reached NMW (von Pelzeln 1873, Bauernfeind 2004, Schifter *et al.* 2007), even though lot 4251 was originally purchased by Vaughan (annotations in sale catalogues). Presumably, von Fichtel bought it from Vaughan shortly thereafter. Extant specimens that probably refer to these lot numbers are a Collared Kingfisher *Todiramphus collaris sacer*, Sacred Kingfisher *T. s. sanctus* and Society Kingfisher. However, ambiguity exists as to which specimen represents which lot number; for example, the small-belted specimen of lot 6594 is now associated with the Sacred Kingfisher, which lacks a 'black belt across the belly' (annotation in the NHMUK sale catalogue). It is beyond our scope to examine this anomaly in more detail, as none of these three specimens is of Chattering Kingfisher.

John Thompson, taxidermist at the British Museum, London, bought lot 5612, comprising two birds, having been asked by Lord Stanley to purchase specimens when the latter did not attend the auction personally (Largen 1987). According to Largen (1987) one bird in the lot was misidentified, but the other was a Chattering Kingfisher (specimen D2326). Specimen D2326 is still present at LIVCM (Fig. 4), and originated from the Leverian



Museum (according to its label). Like Largen (1987) we cannot completely eliminate the possibility that this specimen is the type, but neither can this be proven. Wagstaffe (1977) did not include it in his list of type specimens at the Liverpool museum.

**Bullock's museum.**—Bullock did not purchase any of the kingfisher lots from the Leverian Museum in 1806, but he may well have received or bought specimens whose origins cannot be traced (Medway 1979). Because the specimen of Chattering Kingfisher at Naturalis carries the annotation 'type' on its label (see below), we now discuss its provenance as a Cook specimen.

Temminck did not purchase specimens at the 1806 auction (Whitehead 1969, 1978) but he was a prominent buyer at the Bullock auction (Whitehead 1969). Jansen & Roe (2013) described the various extant catalogues of the Bullock auction. For this paper, we consulted the reprint (King & Locheé 1979b), as well as copies at NHMUK, Cambridge (UK) and Naturalis. The latter is the original catalogue with notations in Temminck's hand. For each of the lots listed below, its description and the annotation (of the buyer) per copy is given: (i) lot 2 (18 May 1819) 'Sacred Kingfisher, *Alcedo sacra*'. Temminck (King & Locheé 1979b), Temminck (NHMUK), Temminck (Cambridge), Temminck (Naturalis); (ii) lot 5 (18 May 1819) 'Sacred Kingfisher (male and female) *Alcedo sacra*'. Baron Laugier (King & Locheé 1979b), Baron Laugier (NHMUK), Laugier (Cambridge), no annotation (Naturalis); (iii) lot 5 (19 May 1819) 'Sacred Kingfisher, *Alcedo sacra*'. Bell (King & Locheé 1979b), Bell (NHMUK), Bell Buckingham (Cambridge), no annotation (Naturalis); (iv) lot 22 (1 June 1819) 'Sacred Kingfisher and Green Tody'. Fector (King & Locheé 1979b), Fector (NHMUK), Fector (Cambridge), no annotation (Naturalis); and (v) lot 99 (2 June 1819) 'Pair of Sacred Kingfisher (male and female)'. Vigors (King & Locheé 1979b), illegible (NHMUK), Vigors (Cambridge), no annotation (Naturalis).

Specimens purchased by Fector and Vigors went to unknown collections, and may be lost, leaving three lots whose route may be traceable. Baron Laugier purchased lot 5 on 18 May 1819, but in 1836 he specifically stated that he only possessed Sacred Kingfishers (Laugier de Chartrouse 1836). These were spread after the disposal of his collection in 1837 and it is unknown where his kingfishers are now.

Temminck made detailed notes of his purchases for Leiden University and these are available as an undated, seven-page list in the Naturalis archives (Temminck n. d.; cf. Jansen & Roe 2013). In this he crossed out lot 2 (from 18 May 1819), meaning that he probably exchanged this specimen during or soon after the auction, making the current whereabouts of this specimen hard to establish. Temminck also indicated that he purchased lot 5 on 19 May 1819 (attributed to Bell in the auction catalogues), and that it was *Alcedo sacra*. He must have bought it from Bell during or soon after the auction.

Naturalis holds six specimens of Chattering Kingfisher and the possibility remains that one is lot 5 from 19 May 1819, with the additional question as to whether it represents the species' type specimen. Of the six specimens, three adults were collected after 1823 and cannot be Cook specimens (compare the inventory in Schlegel 1863 with that in Schlegel 1875). Details of the other three follow, but note that when the collection was relabelled by Finsch in c.1890, all of the original data were lost. Finsch transcribed new labels (with his own interpretations) for all of them: (i) RMNH.AVES.204878, originated from the Cabinet Temminck (Temminck 1807) but no locality was given by Temminck (Schlegel added 'Taiti' in his catalogue and on the specimen's label). Adult. Indicated on the label as the type. Reference on the label is made to Temminck's catalogue (1807: 71, no. 963). (ii) RMNH.AVES.204879, no origin given (although Temminck indicated on the old pedestal that it originated from the Marquesas). Juvenile. (iii) RMNH.AVES.204880, originated from the



Bullock auction according to the label. Adult. Indicated as the type by Finsch. The label indicates that Temminck noted it was from Otahiti / Society Islands.

RMNH.AVES.204879 cannot be the type specimen as it is a juvenile, whereas the type description refers to an adult or adult-type. While RMNH.AVES.204878 is labelled as being the type, it is not. This specimen originates from Temminck's private collection for which JFFJJ recently unearthed an undated manuscript catalogue in the Naturalis archives (Temminck c.1805). Therein, Temminck does not mention a sacred-type kingfisher. However, it does appear in a revised list (Temminck 1807), meaning that between 1805 and 1807, Temminck acquired RMNH.AVES.204878. Note that Temminck did not state for each entry how many specimens were involved.

It is clear that, of the three specimens discussed, RMNH.AVES.204880 represents lot 5 from 19 May 1819, bought by Temminck at the Bullock auction. The specimen now bears a Finsch label with an erroneous lot number and date (lot 4, 18 May 1819; cf. Jansen & Roe 2013). We cannot certainly conclude that this specimen was collected during one of Cook's voyages because it is unclear from where Bullock acquired it. Van den Hoek Ostende *et al.* (1997) did not include the specimen in their list of type specimens at Naturalis.

## Discussion

*Provenance of Cook's specimens.*—Our search for the type specimen of Chattering Kingfisher was unsuccessful for several reasons. First, it seems that two specimens are involved: Latham's Respected (=Chattering) Kingfisher and Latham's variety A of Sacred Kingfisher. Although two birds, said to be types, are still present in LIVCM and Naturalis, the provenance of both is uncertain. Neither was included in relevant lists of type specimens (Wagstaffe 1978, van den Hoek Ostende *et al.* 1997). Another reason for our lack of success is that many, if not most, of Cook's specimens were preserved in liquid (Burton 1969). Steinheimer (2005) mentioned that 53 birds from Cook expeditions still exist (either as skins or mounts). By far the majority are unlabeled, but they include two fluid-preserved specimens with marks on the jars dating from 1792 (Burton (1969).

The uncertainty of the type locality of Chattering Kingfisher led Stresemann (1950) to designate Raiatea. His rationale are unclear, but he apparently ignored the fact that Cook visited not only Raiatea but also Huahine and Bora Bora on the third voyage. The type specimen(s) may have originated from either of these other islands.

*Muséum National d'Histoire Naturelle (MNHN) and the Baudin expedition.*—Holyoak & Thibault (1982) mentioned that no collecting trip visited French Polynesia between the third Cook voyage (ending 1780) and that of the *La Coquille* in March–June 1823. However, they overlooked the explorations made by George Bass (1771–1803). Many old specimens, including the kingfisher(s), could have been taken by Bass (cf. Jansen 2014). Bass has been associated with the Baudin expedition (Bowden 1952, Estensen 2005, Starbuck 2009) and he visited Tahiti and French Polynesia. He probably collected (at least) five bird specimens in New Zealand ( $n = 2$ ), Tahiti and Tonga ( $n = 2$ ) in 1801–02 that were previously ascribed to the Baudin expedition (Jansen 2014). The latter returned to Europe in 1803–04 and most material was deposited at the Muséum National d'Histoire Naturelle (MNHN), Paris. Many specimens could therefore have spread via exchanges with other museums, which possibility we now explore in the remainder of the discussion.

*MNHN and Temminck.*—The private collection of Coenraad Jacob Temminck (1778–1858) in 1807 (Temminck 1807) shows strong similarities with that of MNHN. For example, Temminck possessed many specimens from regions (Africa, South America and the Caribbean) and collectors also well represented at MNHN. Because of the strong connection

between Temminck and MNHN, some of Bass's Pacific material could have found its way to Temminck, whose collection formed the basis of that now held in Naturalis.

The time of arrival of Temminck's Pacific specimens can be deduced by comparing the 1805 manuscript catalogue with the officially published version in 1807 (Temminck c.1805, 1807, 1858: 37). Several arrived in 1805–07, including a Chattering Kingfisher (RMNH.AVES.204878; Temminck 1807: 71) and four Grey-green Fruit Doves *Ptilinopus purpuratus* (RMNH.AVES.21937–940; Temminck 1807: 144). Because Temminck reworked these specimens with arsenic soap directly after receipt (*cf.* Farber 1977: 563), they are still in excellent condition and not faded. They may have originated from MNHN, because specimens from areas other than the Pacific, known to have come via MNHN, are listed in Temminck's (1807) catalogue.

**MNHN and the Leverian Museum.**—Pacific material from the Leverian Museum is often ascribed to Cook (*cf.* Stresemann 1953, Bauernfeind 2004: 557, Kaeppler 2011). However, specimens may have been acquired from sources like MNHN as well. Specimens from Bass could have reached the Leverian Museum in this way. To establish a connection between MNHN and the Leverian Museum, we researched known specimens from the latter, with the watercolours of specimens and displays in the Leverian Museum by Sarah Stone, produced in 1777–1806 (Jackson 1998: 10), being our primary source.

The strongest evidence of a link between the two museums is the similarity between them in the presence of specimens from the Caribbean and Cayenne (=French Guiana). Stone depicted several species from the Caribbean including from San Domingo (=Hispaniola) and Puerto Rico in undated paintings. The Baudin expedition to the West Indies (1796–98) visited both islands and was one of the few to do so. Several specimens from this expedition are still extant (*cf.* Wetherbee 1985, Jansen 2014).

From French Guiana, MNHN received many specimens from French collectors, including Charles-Nicolas-Sigisbert Sonnini de Manoncourt, Mn La Brosse, Jean-Charles Brocheton, Jean-Baptiste Leblond and Louis Claude Richard (*cf.* Saint-Hilaire 1809, Berlioz 1938, Stowell Rounds 1990). In contrast, very few British collectors were active there. John Gabriel Stedman donated just 16 curiosities (none of them birds) in 1796 to the Leverian Museum (Kaeppler 2011: 17), while the size of Mrs Blomefield's collection is unknown (Latham 1781: 44) and Charles Waterton only collected much later (Stowell Rounds 1990: 174–176). Thus, birds from the Caribbean and French Guiana in the Leverian Museum probably came via MNHN.

The presence of specimens from the Baudin expedition to Australia and the Pacific (1800–04) in the Leverian Museum may be the result of exchange between Parkinson (then owner of the latter collection) and MNHN, which received many specimens from the Baudin expedition on its return to France (*cf.* Jansen 2014). Unfortunately, these lack original labels like almost all pre-1800 material. It may well be that LIVCM specimen D2326 arrived via this route.

**MNHN and Bullock.**—Stresemann (1951: 126) regarded Bullock as an important buyer at the Leverian auction and therefore to have owned many birds collected during Cook's expeditions. In this respect, it is strange that Bullock's name hardly appears in the annotated catalogue of the Leverian auction. However, Bullock (1813) specifically referred to bird specimens from the Cook voyages, e.g. a Marbled Murrelet *Brachyramphus marmoratus* from Kamchatka (Bullock 1813: 54; *cf.* Schifter *et al.* 2007: 140–141), a Snowy Sheathbill *Chionis albus* (that arrived via the Royal College of Surgeons; Bullock 1813: 66) and several pigeons (Bullock 1813: 72). None of these was mentioned in earlier versions of his catalogue (e.g. Bullock 1809, 1812), so these probably reached him as late as 1812–13.

Several transactions of bird specimens between MNHN and Bullock are recorded. For example, a cockatoo from Australia was sent to Bullock on 31 August 1814. Bullock purchased or exchanged specimens collected for MNHN from dealers like Becouér, M. Gigot'orcia (Jansen 2014: 14) and Leadbeater (Johnstone *et al.* 2014). How birds from New Zealand (Kuhl 1820: 44, 86), Fiji (Kuhl 1820: 57), Tahiti (Kuhl 1820: 68) and New Caledonia (Kuhl 1820: 44–46) reached Bullock is unknown, nor is the original collector or the collection date of these specimens. These specimens could be birds collected either by Bass or during Cook's expeditions (*cf.* Jansen 2014). Perhaps RMNH.AVES.204880 arrived via this route at Bullock's auction, where it was bought by Temminck.

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#### References:

- Bauernfeind, E. 2004. Bird specimens from the Leverian Museum: documentation and present holdings at the NMW. *Denisia* 13: 555–565.
- Berlioz, J. 1938. Les collections ornithologiques du Museum de Paris. *L'Oiseau et R.F.O.* 8: 237–260.
- Bowden, K. M. 1952. *George Bass 1770–1803*. Oxford Univ. Press, Melbourne.
- Bullock, W. 1809. *A companion to the Liverpool Museum, containing a brief description of upwards of four thousand natural and foreign curiosities, antiquities and productions of the fine arts; now open for public inspection in five apartments, built and fitted up for the purpose at the house of William Bullock, jeweller and silversmith to his Royal Highness the Duke of Gloucester, Church-Street, Liverpool*. Seventh edn. Bath.
- Bullock, W. 1812. *A companion to the London Museum and Pantherion, containing a brief description of upwards of fifteen thousand natural and foreign curiosities, antiquities and productions of the fine arts; now open for public inspection in The Egyptian Temple, Piccadilly, London*. Twelfth edn. London.
- Bullock, W. 1813. *A companion to the London Museum and Pantherion, containing a brief description of upwards of fifteen thousand natural and foreign curiosities, antiquities and productions of the fine arts; now open for public inspection in The Egyptian Temple, Piccadilly, London*. Fifteenth edn. London.
- Burton, P. J. K. 1969. Two bird specimens probably from Cook's voyages. *Ibis* 111: 388–390.
- Cibois, A. & Thibault, J.-C. 2009. Combien d'espèces de martins-chasseurs existe-t-il à Tahiti? *Te Manu* 65: 16–18.
- Cook, J. & King, J. 1784. *A voyage to the Pacific Ocean*, vol. 2. W. & A. Strahan, London.
- Coues, E. 1879. Art. XXVI – Third instalment of American ornithological bibliography. *Bull. US Geol. Geogr. Surv. Terr.* 5: 521–1066.
- Dryander, J. n.d. *Four ms. lists of birds in drawings of J. G. A. Forster & W. W. Ellis (& Webber) from Capt. J. Cook's second voyage, 1772–5, and third voyage 1776–80*. Nat. Hist. Mus., Zoological Library, London.
- Dryander, J. n.d. *Manuscript catalogue of drawings of birds by W. W. Ellis and William Webber, and of specimens collected on Captain James Cook's third voyage round the world, 1776–1880*. Nat. Hist. Mus., Zoological Library, London.
- Estensen, M. 2005. *The life of George Bass: surgeon and sailor of the Enlightenment*. Allen & Unwin, Crows Nest.
- Farber, P. L. 1977. The development of taxidermy and the history of ornithology. *Isis* 68: 550–566.
- Finsch, O. & Hartlaub, G. 1867. *Beitrag zur Fauna Centralpolynesiens. Ornithologie der Viti-, Samoa- und Tonga-Inseln*. H. W. Schmidt, Halle.
- Fry, C. H., Fry, K. & Harris, A. 1992. *Kingfishers, bee-eaters and rollers*. Christopher Helm, London.
- Gouni, A. & Zysman, T. 2007. *Oiseaux du Fenua: Tahiti et ses îles*. Ed. Téthys, Tahiti.
- Gmelin, J. F. 1788. *Systema naturae*, vol. 1. Georg Emmanuel Beer, Leipzig.



- van den Hoek Ostende, L. W., Dekker, R. W. R. J. & Keijl, G. O. 1997. Type-specimens of birds in the National Museum of Natural History, Leiden. Part 1: non-passerines. *NNM Bull.* 1: 1–248.
- Holyoak, D. T. & Thibault, J.-C. 1982. L'exploration ornithologique de la Polynésie orientale. *J. Soc. Océanistes* 74–75: 259–273.
- Jackson, C. E. 1998. *Sarah Stone natural curiosities from the New Worlds*. Merrell Holberson, London.
- Jansen, J. J. F. J. 2014. Towards the resolution of long-standing issues regarding the birds collected during the Baudin expedition to Australia and Timor (1800–1804): a review of original documents reveals new details about collectors, donors, numbers and disbursement. *J. Natl. Mus. (Prague), Nat. Hist. Ser.* 183: 5–18.
- Jansen, J. J. F. J. & Roe, R. S. 2013. Tracking Cook's third voyage (1776–79) Hawaiian Rails *Porzana sandwichensis*, with some comments on their type status. *Bull. Brit. Orn. Cl.* 133: 59–67.
- Jansen, J. J. F. J. & Roe, R. S. submitted. Black-eyed Thrush or Yellow-tufted Flycatcher: the troubled nomenclatural history of Yellow-tufted Honeyeater *Lichenostomus melanops*. *Bull. Brit. Orn. Cl.*
- Johnstone, R. E., Fisher, C. & Saunders D. A. 2014. *Calyptorhynchus baudinii* Lear, 1832 (Aves, Cacatuidae): proposed conservation of usage by designation of a neotype. *Bull. Zool. Nomencl.* 71: 170–178.
- Kaeppeler, A. L. 2011. *Holophusicon: the Leverian Museum. An eighteenth-century English institution of science, curiosity, and art*. ZKF Publishers, Museum für Völkerkunde, Wien.
- King, T. & Locheé, J. 1979a. *Catalogue of the Leverian Museum*. Privately published, London.
- King, T. & Locheé, J. 1979b. *Sale catalogue of the Bullock's Museum*. Privately published, London.
- Kuhl, H. 1820. *Conspectus Psittacorum*. Bonn.
- Largen, M. J. 1987. Bird specimens purchased by Lord Stanley at the sale of the Leverian Museum in 1806, including those still extant in the collections of the Liverpool Museum. *Archiv. Nat. Hist.* 14: 265–288.
- Latham, J. 1781. *A general synopsis of birds*, vol. 1(1). Benjamin White, London.
- Latham, J. 1782. *A general synopsis of birds*, vol. 1(2). Benjamin White, London.
- Latham, J. 1801a. *Supplement II to the general synopsis of birds*. Leigh, Sotheby & Son, London.
- Latham, J. 1801b. *Supplementum indicis ornithologici, sive systematis ornithologiae*. Leigh, Sotheby & Son, London.
- Latham, J. 1822. *A general history of birds*, vol. 5. Jacob & Johnson, Winchester.
- Laugier de Chartrouse, M. le Baron 1836. *Catalogue des oiseaux de la collection de M. le Baron Laugier de Chartrouse*. Garcin, Arles.
- Lichtenstein, M. H. C. 1844. *Descriptiones animalium quae in itinere ad maris australis terras per annos 1772, 1773 et 1774 suscepto collegit observavit et delineavit Johannes Reinoldus Forster*. Dummler, Berlin.
- Lysaght, L. 1959. Some eighteenth century bird paintings in the library of Sir Joseph Banks (1743–1820). *Bull. Brit. Mus. (Nat. Hist.)*, *Hist. Ser.* 1: 251–371.
- Medway, D. G. 1979. Some ornithological results of Cook's third voyage. *J. Soc. Bibliog. Nat. Hist.* 9: 315–351.
- Parkinson, S. 1773. *A journal of a voyage to the South Seas, in his Majesty's ship, the Endeavour*. Privately published, London.
- von Pelzeln, A. 1873. On the birds in the Imperial collection at Vienna obtained from the Leverian Museum. Part 1. *Ibis* (3)3: 14–54.
- Pratt, H. D., Bruner, P. L. & Berrett, D. G. 1987. *The birds of Hawaii and the tropical Pacific*. Princeton Univ. Press.
- Saint-Hilaire, G. 1809. Sur l'accroissement des collections des mammifères et des oiseaux du Museum d'Histoire Naturelle. *An. Mus. Hist. Nat.* 7: 87–88.
- Sawyer, F. C. 1949. Notes on some original drawings of birds used by Dr. John Latham. *J. Soc. Bibliog. Nat. Hist.* 2: 173–180.
- Schifter, H., Bauernfeind, E. & Schifter, T. 2007. *Die Typen der Vogelsammlung des Naturhistorischen Museums Wien. Teil I. Nonpasseres*. Naturhistorisches Museum Wien.
- Schlegel, H. 1863. *Muséum d'Histoire naturelle des Pays-Bas. Revue méthodique et critique des collections déposées dans cet établissement*, vol. 3. E. J. Brill, Leiden.
- Schlegel, H. 1875. *Revue de la collection des Alcedines faisant partie du Musée de Pays-Bas*. E. J. Brill, Leiden.
- Sharpe, R. B. 1868. *A monograph of the Alcenididae*. Privately published, London.
- Sharpe, R. B. 1906. Birds. Pp. 79–515 in *The history of the collections of the natural history departments of the British Museum*. Trustees of the Brit. Mus., London.
- Starbuck, N. 2009. Constructing the 'perfect' voyage: Nicolas Baudin at Port Jackson, 1802. Ph.D. thesis. Univ. of Adelaide.
- Steinheimer, F. D. 2005. Wissenschaftliche Fundgruben: Historische Vogelsammlungen in Deutschland. *Der Falke* 52: 272–276.
- Stowell Rounds, R. 1990. *Men and birds in South America 1492 to 1900*. QED Press, Fort Bragg, CA.
- Stresemann, E. 1950. Birds collected during Capt. James Cook's last expedition (1776–1780). *Auk* 67: 66–88.
- Stresemann, E. 1951. *Die Entwicklung der ornithology. Von Aristoteles bis zur gegenwart*. F. W. Peters, Berlin.
- Stresemann, E. 1953. Analyse von C. J. Temmincks "Catalogue Systematique" (1807). *Zool. Meded. Leiden* 16: 319–331.
- Temminck, C. J. n.d. *Achats pour les Université oiseaux et mammifères / Nota van aankopen mammalien en vogelen in de publieke veiling van de heer Bullock in Londen*. Naturalis Biodiversity Center, Leiden.

- Temminck, C. J. c.1805. *Eigenhandig geschreven catalogus van het Kabinet van den Heer C. J. Temminck*, fol. V. MS. Naturalis Biodiversity Center, Leiden.
- Temminck, C. J. 1807. *Catalogue systematique du cabinet d'ornithologie et de la collection de quadrumanes de Crd. Jb. Temminck; avec courte description des oiseaux non-décrits; suivi d'une note d'oiseaux doubles et de quelques autres objets d'histoire naturelle offerts en échange*. C. Sepp Jansz, Amsterdam.
- Temminck, C. J. 1858. *Catalogue de la Bibliothèque délaissée par Mr. C.J. Temminck en son vivant Directeur du Musée d'Histoire Naturelle des Pays-Bas à Leide, chevalier de l'ordre du Lion Neerlandais, member de plussiers Sociétés savants*. E. J. Brill, Leiden.
- Townsend, C. H. & Wetmore, A. 1919. Reports on the scientific results of the expedition to the tropical Pacific in charge of Alexander Agassiz, on the U.S. Fish Commission steamer "Albatross," from August, 1899, to March, 1900, Commander Jefferson F. Moser, U.S.N., commanding. XXI. The birds. *Bull. Mus. Comp. Zool.* 6: 151–225.
- van der Vliet, R. E. & Jansen, J. J. F. J. 2015. The chequered history of the Chattering Kingfisher *Todiramphus tutus* Tahiti. II: present status. *Bull. Brit. Orn. Cl.* 135: 121–130.
- Wagstaffe, R. 1978. *Type specimens of birds in the Merseyside County Museums*. Merseyside County Mus., Liverpool.
- Wetherbee, D. K. 1985. The extinct Cuban and Hispaniolan Macaws (*Ara*, Psittacidae), and description of a new species, *Ara cubensis*. *Carib. J. Sci.* 21: 169–175.
- Whitehead, P. J. P. 1969. Zoological specimens from Captain Cook's voyages. *J. Soc. Bibliog. Nat. Hist.* 5: 161–201.
- Whitehead, P. J. P. 1978. A guide to the dispersal of zoological material from Captain Cook's voyages. *Pacific Stud.* 2: 52–93.
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